

REMARKS

The Office Action mailed November 11, 2004 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-18 are now pending in this application. Claims 1-18 stand rejected. Claims 1, 6, 12 and 18 have been amended. No new matter has been added.

The rejection of Claims 12-18 under 35 U.S.C. § 112, second paragraph, is respectfully traversed.

The rejection of Claims 6-11 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Applicants have amended Claim 6 to recite a system configured to generate a two-dimensional electronic drawing of each of the plurality of connector fittings from the three-dimensional harness definition. Claims 7-11 depend, directly or indirectly, from independent Claim 6. Accordingly, Applicants respectfully request that the rejection of Claims 6-11 under Section 112, second paragraph, be withdrawn.

Applicants thank the Examiner for the suggested amendment for Claim 18. Claim 18 has been amended to recite a “system in accordance with Claim 12...”

The rejection of Claims 1-18 under 35 U.S.C. § 103 as being unpatentable over Aldrich et al. (U.S. Patent No. 5,138,698) in view of Hughes et al. (U.S. Patent No. 5,506,950) is respectfully traversed.

Aldrich et al. describe a wire path that is designed by first creating other points offset from a frame (60), and connecting the points to form line segments (63). The collection of the line segments is called the wire path. The wire path may optionally be further designed by creating circular arcs (82) curves, not shown, or splines, at the intersection of line the segments. A mechanical design system, such as CATIA, generates geometrically and dimensionally accurate computer aided models as well as pictorial cable routing drawings. Wires (100) are created in CATIA 34 by concatenating line segments, curves and splines.

This operation can be simplified by using an automatic concatenate feature in CATIA. A resulting wire (100) represents an individual wire between two termination points.

Hughes et al. describe a computer implemented method for designing a form board for manufacturing a wire harness. A wire harness is used to convert a three-dimensional computer representation of a wire harness into a two dimensional model of the harness. The method includes modeling the harness as a plurality of segments and iteratively moving each segment into an unfolding plane. A computer generated representation of the two dimensional model is provided.

Claim 1 recites a method including “generating two-dimensional electronically modeled aircraft engine harnesses from a three-dimensional harness definition that includes a plurality of connector fittings coupled together with wire cables, wherein said three-dimensional harness definition defines a harness, said generating the two-dimensional electronically modeled aircraft engine harnesses comprises...defining the three-dimensional harness definition such that each of the plurality of connector fittings includes a plurality of connector fitting ports for orienting the connector fitting with respect to each other of the plurality of connector fittings in a cartesian coordinate system...determining design parameters of the harness...generating a two-dimensional stick form model of the plurality of connector fittings from the three-dimensional harness definition...creating, by a processor, a first line that extends from a first one of the plurality of connector fittings to a second one of the plurality of connector fittings...producing a second line that extends from said first line to a third one of said plurality of connector fittings.”

Neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest a method as recited in Claim 1. Specifically, neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest defining a three-dimensional harness definition such that each of the plurality of connector fittings includes a plurality of connector fitting ports for orienting the connector fitting with respect to each other of the plurality of connector fittings in a cartesian coordinate system. Moreover, neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest generating a two-dimensional stick form model of the plurality of connector fittings from the three-

dimensional harness definition. Rather, each of Aldrich et al. and Hughes et al. are silent on defining a plurality of connector fitting ports for orienting a connector fitting with respect to each other of a plurality of connector fittings in a cartesian coordinate system. More specifically, neither Aldrich et al. nor Hughes et al. describe orienting each connector fitting within the cartesian coordinate system. Rather, each of Aldrich et al. and Hughes et al. merely describe interconnecting the plurality of connectors. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Aldrich et al. in view of Hughes et al.

Claims 2-5 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5 likewise are patentable over Aldrich et al. in view of Hughes et al.

Claim 6 recites a modeling system for producing a two-dimensional electronic model of an aircraft engine harness, wherein the system is configured to “generate a three-dimensional harness definition that includes a plurality of connector fittings coupled together with wire cables, wherein each of the plurality of connector fittings includes a connector port, a direction port, a free port, and a key port such that each of the plurality of connector fittings are oriented with respect to one another in a cartesian coordinate system, wherein said three-dimensional harness definition defines a harness...generate a two-dimensional electronic drawing of each of the plurality of connector fittings from the three-dimensional harness definition...generate a first line that extends from a connector port of a first one of the plurality of connector fittings to a connector port of a second one of the plurality of connector fittings...generate a second line that extends from said first line to a connector port of a third one of said plurality of connector fittings to produce the two-dimensional electronic model.”

Neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest a modeling system as recited in Claim 6. Specifically, neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest a system configured to generate a three-dimensional harness definition that includes a plurality of connector fittings coupled together with wire cables, wherein each of the plurality of connector fittings

includes a connector port, a direction port, a free port, and a key port such that each of the plurality of connector fittings are oriented with respect to one another in a cartesian coordinate system. Moreover, neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest a system configured to generate a two-dimensional electronic drawing of each of the plurality of connector fittings from the three-dimensional harness definition. Rather, each of Aldrich et al. and Hughes et al. are silent on connector fittings having a connector port, a direction port, a free port, and a key port. More specifically, neither Aldrich et al. nor Hughes et al. describe a system configured to generate a three-dimensional harness definition wherein each of the plurality of connector fittings are oriented with respect to one another in a cartesian coordinate system. Rather, each of Aldrich et al. and Hughes et al. merely describe interconnecting the plurality of connectors. Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Aldrich et al. in view of Hughes et al.

Claims 7-11 depend, directly or indirectly, from independent Claim 6. When the recitations of Claims 7-11 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7-11 likewise are patentable over Aldrich et al. in view of Hughes et al.

Claim 12 recites a system for generating a two-dimensional electronic model of an aircraft engine harness from a three-dimensional aircraft engine harness definition that includes a plurality of connector fittings coupled together with wire cables, wherein the system includes a processor programmed to “define said three-dimensional harness definition, wherein each of the plurality of connector fittings includes a plurality of connector fitting ports for orienting the connector fitting with respect to each other of the plurality of connector fittings in a cartesian coordinate system, wherein said three-dimensional aircraft engine harness definition defines a harness...determine harness design parameters from the three-dimensional aircraft engine harness definition...generate said two-dimensional electronic model of said aircraft engine harness using said three-dimensional harness definition and said harness design parameters.”

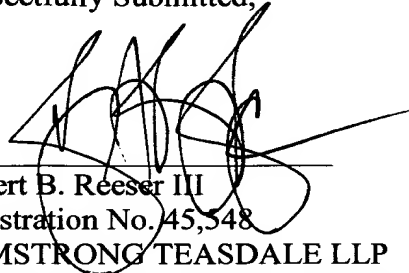
Neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest a system for generating a two-dimensional electronic model as recited in Claim 12. Specifically, neither Aldrich et al. nor Hughes et al., considered alone or in combination, describe nor suggest a processor programmed to define a three-dimensional harness definition, wherein each of the plurality of connector fittings includes a plurality of connector fitting ports for orienting the connector fitting with respect to each other of the plurality of connector fittings in a cartesian coordinate system. Rather, each of Aldrich et al. and Hughes et al. are silent on defining a plurality of connector fitting ports for orienting a connector fitting with respect to each other of a plurality of connector fittings in a cartesian coordinate system. More specifically, neither Aldrich et al. nor Hughes et al. describe orienting each connector fitting within the cartesian coordinate system. Rather, each of Aldrich et al. and Hughes et al. merely describe interconnecting the plurality of connectors. Accordingly, for at least the reasons set forth above, Claim 12 is submitted to be patentable over Aldrich et al. in view of Hughes et al.

Claims 13-18 depend from independent Claim 12. When the recitations of Claims 13-18 are considered in combination with the recitations of Claim 12, Applicants submit that dependent Claims 13-18 likewise are patentable over Aldrich et al. in view of Hughes et al.

For the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 1-18 over Aldrich et al. in view of Hughes et al. be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'R. B. Reeser III', is written over a horizontal line. The signature is stylized with loops and a long horizontal stroke extending to the right.

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